TECHNICAL SUPPLEMENT 2:
QUALITY CONTROL IN HCUP DATA PROCESSING

TABLE OF CONTENTS

This Technical Supplement describes the processes used to ensure the quality of HCUP State Inpatient Databases (SID). It describes the quality review guidelines employed in reviewing data for each variable in the SID, including the edit checks performed to assess the internal consistency of information on each record.

QUALITY REVIEW GUIDELINES

Table 1 summarizes the HCUP quality review guidelines. Variables included in this table may not be on state-specific SID files because not all HCUP variables are available from all states. The Data Organizations determine which variables may be released on the SID.

These guidelines apply to the following summary statistics generated on large inpatient databases:

- number of missing values,
- minimum,
- maximum,
- mean, and
- frequency distributions.

The minimum and maximum values specified above are HCUP limits that may not occur for each data source.

Table 1. HCUP Variables – Quality Review Guidelines		
Variable Name	**Description**	**Guidelines**
ADATE	Admission date.	Monthly frequencies should not fluctuate greatly. There may be some seasonal fluctuations – e.g., fewer admissions in the summer months.
ADAYWK	Admission day of week, Sunday to Saturday.	Missing as often as admission date, if calculated. Minimum = 1 Maximum = 7
ADRG	All-patient refined DRG.	None.
ADRGSEV	All-patient refined DRG severity level.	None.
AGE	Age in years at admission.	Few missing values. Expected mean = 40 Minimum = 0 Maximum = 124 If the mean is less than 40, look for a high percentage of births. If the mean is greater than 40, look for a low percentage of births, or a high percentage of Medicare patients. The distribution of age should be faintly trimodal with few values over 90. Since 10-13% of all admissions are births, approximately that many discharges will indicate age 0. The next swell in the frequency will appear in the childbearing years, 14-43. The third rise in the frequency will appear in the 49-72 age range.
AGEDAY	Age in days (coded only when the age in years is less than 1).	Many missing values. Should be coded for less than 20% of the observations. Expected mean = 15-20 Minimum = 0 Maximum = 364 Records with AGEDAY = 0 (newborns) will account for approximately 10-13% of all records.
AMONTH	Admission month, January to December.	Missing less than or equal to the number of records missing admission dates. Minimum = 1 Maximum = 12 Monthly frequencies should not fluctuate greatly.

Table 1. HCUP Variables – Quality Review Guidelines		
Variable Name	**Description**	**Guidelines**
ASCHED	Scheduled vs. unscheduled admission.	May have many missing values. Minimum = 0 Maximum = 1
ASOURCE	Admission source includes emergency department, another hospital, other health facility, court/law enforcement, and routine.	Can have numerous missing values. Minimum = 1 Maximum = 5 Most records will be routine, birth, and other sources. The emergency department is the next most frequent source.
ATYPE	Admission type includes emergency, urgent, elective, newborn, and delivery.	Can have numerous missing values. Minimum = 1 Maximum = 6 In most sources, the elective category is the most frequent. If coded, newborn and delivery should each be around 10-13%. The number of newborn admissions should be close to the number of observations with AGEDAY = 0.
BWT	Birth weight in grams.	The number of records with nonmissing values should be close to the number with AGEDAY = 0. Expected mean = 3,300 Minimum = 0 Maximum = 65,535
CHG1-CHGnn	Charge detail.	Negative and zero values allowed.
DCCHPR1-DCCHPRnn	Clinical Classifications Software (CCS), formerly known as Clinical Classifications for Health Policy Research (CCHPR): Diagnosis classification.	The number of DCCHPRnn variables should correspond to the number of diagnoses provided by this data source. Minimum = 1 Maximum = 260
DDATE	Discharge date.	Monthly frequencies should not fluctuate greatly. There may be some seasonal fluctuations, e.g., fewer admissions in the summer months.
DIED	Indicates in-hospital death.	Same number of missing values as DISP. Expected mean = 0.02-0.03 Minimum = 0 Maximum = 1 Number of records indicating died should match the number died under DISP.

Table 1. HCUP Variables – Quality Review Guidelines		
Variable Name	**Description**	**Guidelines**
DISP	Disposition of patient includes routine, short-term hospital, skilled nursing facility, intermediate facility, home health care, against medical advice, and death.	Hopefully, few missing values. Minimum = 1 Maximum = 20 Most records are routine discharges. Death rate should be 2-3%.
DOB	Date of birth.	Dates may be after the period of data if the birth century was erroneously reported. Since the distribution of age should be faintly trimodal with few values over 90, the distribution of DOB should also look trimodal. Because 10-13% of all admissions are births, approximately that many discharges will have a DOB in the discharge year.
DQTR	Discharge quarter.	Coded for all observations. Minimum = 0 Maximum = 4 Missing quarters are coded as 0. The number of records in each quarter should not fluctuate greatly.
DRG	DRG in use on discharge date.	Coded for all observations. Minimum = 1 Maximum varies by discharge date: Date — Maximum 1/88-9/88 — 475 10/88-9/90 — 477 10/90-9/91 — 490 10/91-9/93 — 492 10/93-9/94 — 494 10/94-9/97 — 495 10/97-9/98 — 503 Percentage of records with DRG = 470 (ungroupable) should be small. If the percentage is greater than 5%, it may indicate a problem with the diagnoses and procedures. Confirm that the percentage of discharges with DRG = 469 (invalid principal diagnosis) is also small.

Table 1. HCUP Variables – Quality Review Guidelines		
Variable Name	**Description**	**Guidelines**
DRG10	DRG, Version 10.	Coded for all observations. Minimum = 1 Maximum = 492 Percent of records with DRG10 = 470 (ungroupable) should be small. If the percentage is greater than 5%, it may indicate a problem with the diagnoses and procedures. Confirm that the percent of discharges with DRG10 = 469 (invalid principal diagnosis) is also small. The percentage of records with DRG10 = 469 and 470 should be similar to those with DRG = 469 and 470.
DRGVER	Grouper version in use on discharge date.	Coded for all observations. Minimum = 4 Maximum = 10 Frequency should be appropriate for the discharge date: Ver — Effective Dates 4 — 10/1/87-9/30/88 5 — 10/1/88-9/30/89 6 — 10/1/89-9/30/90 7 — 10/1/90-9/30/91 9 — 10/1/91-9/30/92 10 — 10/1/92-9/30/93 11 — 10/1/93-9/30/94 12 — 10/1/94-9/30/95 13 — 10/1/95-9/30/96 14 — 10/1/96-9/30/97 15 — 10/1/97-9/30/98
DSHOSPID	Hospital number as received from the data source.	Coded for all observations.
DSNDX	Maximum number of diagnosis codes that could occur on a discharge record.	Coded for all observations.
DSNPR	Maximum number of procedure codes that could occur on a discharge record.	Coded for all observations.
DSNUM	Data source number.	Coded for all observations.
DSTYPE	Data source type indicates state data organization, hospital association, consortium, and other.	Coded for all observations.
DX1-DXnn	Diagnoses.	See next section: "Diagnosis and Procedure Code Variables."
DXSYS	Diagnosis coding system, usually ICD-9-CM.	Coded for all observations.

Table 1. HCUP Variables – Quality Review Guidelines		
Variable Name	**Description**	**Guidelines**
DXV1-DXVnn	Validity flag for diagnoses – indicates valid, invalid, or missing diagnosis.	The number of validity flags should correspond to the number of diagnoses provided by this data source. Expected Mean < 0.05 Minimum = 0 Maximum = 1
HOSPST	State postal code for hospital.	Coded for all observations.
LOS	Length of stay, edited.	Missing at least as often as LOS_X. Expected mean = 4-10 Minimum = 0 Zero-day stays will account for 2-3% of admissions. Most stays will be less than one month. The distribution of the length of stay will vary greatly depending on two factors: the location of the hospital, and the type of services the hospital offers. East Coast hospitals tend to have longer stays (9-11 days) than West Coast hospitals (4-6 days). Hospitals with large rehabilitation, psychiatric, or long-term-care departments will have patients with extremely long stays. *(Note:* HCUP edits unjustifiably long stays over 365 days, and high or low charges per day). The distribution of length of stay should be right-skewed, some outliers should be expected, and the mean should be greater than the median.
LOS_X	Length of stay, unedited.	Missing less often than LOS. Minimum = 0 Maximum might be extreme. Unexplained long stays over 365 days and discharges with low or high charges per day have not been edited. The distribution should be right-skewed, some outliers should be expected, and the mean should be greater than the median.
MDC	MDC in use on discharge date.	Coded for all observations. Minimum = 0 Maximum = 25

Table 1. HCUP Variables – Quality Review Guidelines		
Variable Name	**Description**	**Guidelines**
MDC10	MDC, Version 10.	Coded for all observations. Minimum = 0 Maximum = 25
MDID_S	Synthetic attending physician number.	None.
MDSPEC	Attending physician specialty.	None.
MRN_S	Synthetic medical record number.	None.
NDX	Number of diagnoses coded on the discharge record.	Coded for all observations. Minimum = 0 Maximum <= DSNDX There should be *few or no* records without diagnoses (NDX = 0). As the number of coded diagnoses increases, the corresponding proportion of discharges should decrease. (Percentages with NDX = 1 or 2 may be similar, though.) If the number of diagnoses supplied by the data source is low (e.g., <= 5), there may be a bulge at the maximum due to counting records that had at least that many diagnoses.
NEOMAT	Neonatal/maternal flag for neonatal diagnoses, maternal diagnoses/procedures, or both on a discharge record.	Coded for all observations. Minimum = 0 Maximum = 3 Percentage of maternal and neonatal should be similar, and approximately 10-13% each. Percentage of maternal records should be a bit higher than percentage of neonatal records. The number of combined neonatal/maternal records should match the number of records with ED100 = 1.

Table 1. HCUP Variables – Quality Review Guidelines		
Variable Name	**Description**	**Guidelines**
NPR	Number of procedures coded on the discharge record.	Coded for all observations. Minimum = 0 Maximum <= DSNPR The percent of discharges without a procedure can vary from 20-50%. As the number of procedures coded increases, the corresponding proportion of discharges should decrease. If the number of procedures supplied by the data source is low (e.g., <= 5), there may be a bulge at the maximum due to counting records that had at least that many procedures.
PAY1	Expected primary payer includes Medicare, Medicaid, private insurance, self-pay, and no charge.	Hopefully, few missing values. Minimum = 1 Maximum = 6 Medicare will be 20-30%. Medicaid will be 5-15%.
PAY1_N	Expected primary payer (more detailed than PAY1) includes Medicare, Medicaid, Blue Cross, commercial, alternative delivery systems (e.g., HMO), self-pay, no charge, Title V, Workers' Compensation, CHAMPUS, and other government.	Missing as often as PAY1. Minimum = 1 Maximum = 12 Medicare will be 20-30%. Medicaid will be 5-15%. The percentage of Blue Cross will vary depending on the geographic area. East Coast hospitals have a much higher concentration of Blue Cross than West Coast hospitals. Consider the socioeconomic relationship between the hospital's clientele and the pay sources. Inner-city urban hospitals tend to treat a higher proportion of Medicaid and self-pay patients.
PAY1_X	Expected primary payer as received from the data source.	None.
PAY2	Expected secondary payer includes Medicare, Medicaid, private insurance, self-pay, and no charge.	May have many missing values. Minimum = 1 Maximum = 6

Table 1. HCUP Variables – Quality Review Guidelines		
Variable Name	**Description**	**Guidelines**
PAY2_N	Expected secondary payer (more detailed than PAY2) includes Medicare, Medicaid, Blue Cross, commercial, alternative delivery systems, self-pay, no charge, Title V, Workers' Compensation, CHAMPUS, and other government.	Missing as often as PAY2. Minimum = 1 Maximum = 12
PAY2_X	Expected secondary payer as received from the data source.	None.
PAY3_X	Expected tertiary payer as received from the data source.	None.
PCCHPR1-PCCHPRnn	Clinical Classifications Software (CCS), formerly known as Clinical Classifications for Health Policy Research (CCHPR): Procedure classification	The number of PCCHPRnn variables should correspond to the number of procedures provided by this data source. Minimum = 1 Maximum = 231
PNUM_S	Synthetic person number.	None.
PR1-PRnn	Procedures.	See next section: "Diagnosis and Procedure Code Variables."
PRDATE1-PRDATEnn	Date of procedure.	The number of date variables should correspond to the number of procedures provided by this data source. Missing at least as often as procedures.
PRDAY1	Days from admission of principal procedure.	The number of procedure-day variables should correspond to the number of procedures provided by this data source. Missing at least as often as procedures. Minimum = -4 Maximum = Maximum LOS+1 Highest frequency at 0. The frequency will fall off very rapidly after 0. The number of inconsistent PRDAY1 (negative 6-filled) should match the number of observations with ED701= 1 and ED801 = 1.
PROCESS	Processing number assigned for tracking records throughout data processing.	Coded on all observations.
PRSYS	Procedure coding system – ICD-9-CM, CPT-4, or HCPCS.	Coded on all observations.

Table 1. HCUP Variables – Quality Review Guidelines		
Variable Name	**Description**	**Guidelines**
PRV1-PRVnn	Validity flag for procedures – indicates valid, invalid, or missing procedure.	The number of validity flags should correspond to the number of procedures provided by this data source. Expected Mean < 0.05 Minimum = 0 Maximum = 1
PSTCO	Modified FIPS state/county code for patient.	None.
RACE	Race includes white, black, Hispanic, Asian, Pacific Islander, and Native American.	Can have numerous missing values. Minimum = 1 Maximum = 6 Check distributions against expectations, given the location of the hospitals. For example: • California may have high concentrations of Asian-Americans. • Areas with heavy urban concentrations (e.g., many states in the Northeast) would be expected to have high concentrations of blacks and other minorities. • Texas, California, and other Southwestern states, in addition to Florida, would be expected to have high concentrations of Hispanics.
RATE1-RATEnn	Charge detail expressed as the rate per unit (content varies by data source).	None.
RDRG	Refined DRG.	None.
RDRGWT	Refined DRG weight.	None.
READMIT	Readmission indicator.	None.
REVCD1-REVCDnn	Charge detail indicates revenue codes associated with detailed charges (content varies by data source).	None.
SEQ_SID	Unique sequence number indicates the order in which the data file is sorted.	Coded on all observations. Included in database starting in 1994.

Table 1. HCUP Variables – Quality Review Guidelines		
Variable Name	**Description**	**Guidelines**
SEX	Sex includes male or female.	Few missing values. Expected mean = 1.6 Minimum = 1 Maximum = 2 Expect 60% female. Even excluding deliveries, females tend to be more frequent users of medical services.
SURGID_S	Synthetic primary surgeon number.	None.
TMDX1-TMDXn	Time of onset for each diagnosis indicates whether the diagnosis was present at admission.	Missing at least as often as diagnosis. Minimum = 0 Maximum = 1
TOTCHG	Total charges, edited.	Missing at least as often as TOTCHG_X. No zero values allowed. Dollars rounded. Expected Mean = 3,000-10,000 Minimum = 1 Maximum = 9,999,999,999 The distribution of total charges is very sensitive to the length of stay. Hospitals that on average have long lengths of stay will have higher total charges. *(Note:* HCUP edits high or low charges per day). The distribution of total charges should be right-skewed, some outliers should be expected, and the mean should be greater than the median.
TOTCHG_X	Total charges, unedited.	Hopefully, few missing values. No zero values allowed. Retains cents if supplied. Minimum = -9,999,999,999.99 Maximum = +9,999,999,999.99 Discharges with unjustifiably high or low charges per day have not been edited. The distribution should be right-skewed, some outliers should be expected, and the mean should be greater than the median.
UNIT1-UNITnn	Charge detail expressed as number of units of specific services (content varies by data source).	All values should be rounded to the nearest whole dollar. Minimum = 1
YEAR	Discharge year (calendar).	Coded for all observations.
ZIP	Zip code of patient.	None.

Table 1. HCUP Variables – Quality Review Guidelines		
Variable Name	**Description**	**Guidelines**
ZIP_S	Synthetic zip code of patient.	None.

DIAGNOSIS AND PROCEDURE CODE VARIABLES

The coding of the diagnosis/procedure-specific variables is interdependent. These variables are:

- Diagnoses (DX1-DX30) and procedures (PR1-PR30)
- Validity flags (DXV1-DXV30 and PRV1-PRV30)
- CCS codes (DCCHPR1-DCCHPR30 and PCCHPR1-PCCHPR30)

Table 2 demonstrates the relationship between these variables.

Table 2. Relationship Between Diagnosis and Procedure Codes and Their Associated Variables		
Diagnosis (DXn)/ Procedure Code (PRn)	**Validity Flags DXVn/PRVn**	**CCS Codes DCCHPRn/PCCHPRn**
Missing	. or -9	. or -999
Valid Code	0 if consistent with age and sex; .C or -6 if inconsistent	1-260/ 1-231
Invalid Code	1	.A or -888

HCUP EDIT CHECKS

Table 3 lists all of the edit checks performed on the HCUP inpatient discharge data, along with their associated variable names. Variables are named EDnnn, where nnn is a unique number. HCUP uses many diagnosis and procedure screens to define specific conditions employed in the editing procedures. These screens are defined following the edit-check table. The condition column specifies the source code used to identify the problem. Variables with the prefix "I." contain information as provided by the data source (e.g., I.LOS is length of stay as provided by the data source).

Table 3. HCUP Edit Checks

Edit Check	Description	Condition	Action
ED010	**REPORTED LOS IS NOT EQUAL TO CALCULATED LOS** The length of stay calculated from admission date and discharge date does not equal the reported length of stay.	I.LOS ne LOS_X	For tabulation purposes only.
ED011	**ADMIT DATE IS AFTER DISCHARGE DATE** The length of stay is negative.	LOS < 0	Set ADATE and LOS to inconsistent (.C).
ED020	**REPORTED AGE IN YEARS DOES NOT EQUAL CALCULATED AGE** The age in years calculated from birthdate and admission date does not equal the reported age.	I.AGE ne AGE	For tabulation purposes only.
ED021	**AGE IN YEARS INCONSISTENT WITH INFANT AGE** Infant age is nonmissing, but the age in years is greater than zero.	(AGEDAY >= 0) and (AGE > 0)	Set AGEDAY and AGE to inconsistent (.C).
ED100	**MATERNAL AND NEONATAL RECORD** Codes in the diagnosis vector or the procedure vector satisfy both the maternal and neonatal screens.	DX1-DX30 or PR1-PR30 are MATERNAL and NEONATE	For tabulation purposes only.
ED101	**PRINCIPAL DIAGNOSIS INCONSISTENT WITH SEX** The sex coded for the patient does not agree with the sex of the principal diagnosis.	SEX ne Sex of DX1	Set DXV1 and SEX to inconsistent (.C).
ED102-ED1nn	**SECONDARY DIAGNOSIS INCONSISTENT WITH SEX** The sex coded for the patient does not agree with the sex of a secondary diagnosis.	SEX ne Sex of DXn	Set DXVn and SEX to inconsistent (.C).
ED201	**PRINCIPAL PROCEDURE INCONSISTENT WITH SEX** The sex coded for the patient does not agree with the sex of the principal procedure.	SEX ne Sex of PR1	Set PRV1 and SEX to inconsistent (.C).

Table 3. HCUP Edit Checks			
Edit Check	**Description**	**Condition**	**Action**
ED202-ED2nn	**SECONDARY PROCEDURE INCONSISTENT WITH SEX** The sex coded for the patient does not agree with the sex of a secondary procedure.	SEX ne Sex of PRn	Set PRVn and SEX to inconsistent (.C).
ED301	**NEONATAL PRINCIPAL DIAGNOSIS INCONSISTENT WITH AGE** The principal diagnosis satisfies the NEONATE screen, and the age in years is greater than zero. Retain age on a combined neonatal/maternal record.	(DX1 is NEONATE) and (AGE > 0)	Set DXV1 to inconsistent (.C). If NEOMAT ne 3, set AGE and AGEDAY to inconsistent (.C).
ED302-ED3nn	**NEONATAL SECONDARY DIAGNOSIS INCONSISTENT WITH AGE** A secondary diagnosis satisfies the NEONATE screen, and the age in years is greater than zero. Retain age on a combined neonatal/maternal record.	(DXn is NEONATE) and (AGE > 0)	Set DXVn to inconsistent (.C). If NEOMAT ne 3, set AGE and AGEDAY to inconsistent (.C).
ED401	**MATERNAL PRINCIPAL DIAGNOSIS INCONSISTENT WITH AGE** The principal diagnosis satisfies the MATERNAL screen, and the nonmissing age in years is less than 10 or greater than 55. Retain age on a combined maternal/neonatal record.	(DX1 is MATERNAL) and NOT (10 <= AGE <= 55)	Set DXV1 to inconsistent (.C). If NEOMAT ne 3, set AGE and AGEDAY to inconsistent (.C).
ED402-ED4nn	**MATERNAL SECONDARY DIAGNOSIS INCONSISTENT WITH AGE** A secondary diagnosis satisfies the MATERNAL screen, and the nonmissing age in years is less than 10 or greater than 55. Retain age on a combined maternal/neonatal record.	(DXn is MATERNAL) and NOT (10 <= AGE <= 55)	Set DXVn to inconsistent (.C). If NEOMAT ne 3, set AGE and AGEDAY to inconsistent (.C).

Table 3. HCUP Edit Checks			
Edit Check	**Description**	**Condition**	**Action**
ED501	**MATERNAL PRINCIPAL PROCEDURE INCONSISTENT WITH AGE** The principal procedure satisfies the MATERNAL screen, and the nonmissing age in years is less than 10 or greater than 55. Retain age on a combined maternal/neonatal record.	(PR1 is MATERNAL) and NOT (10 <= AGE <= 55)	Set PRV1 to inconsistent (.C). If NEOMAT ne 3, set AGE and AGEDAY to inconsistent (.C).
ED502-ED5nn	**MATERNAL SECONDARY PROCEDURE INCONSISTENT WITH AGE** A secondary procedure satisfies the MATERNAL screen, and the nonmissing age in years is less than 10 or greater than 55. Retain age on a combined maternal/neonatal record.	(PRn is MATERNAL) and NOT (10 <= AGE <=55)	Set PRVn to inconsistent (.C). If NEOMAT ne 3, set AGE and AGEDAY to inconsistent (.C).
ED600	**LONG LOS, JUSTIFIED** The length of stay is over 365 days, and is justified by a long-term-care diagnosis, a perinatal diagnosis, discharge to another facility, or the patient's death.	(LOS > 365) and (PERINATE or LTC or (2 <= DISP <= 5) or (DIED = 1))	For tabulation purposes only.
ED601	**LONG LOS, UNJUSTIFIED** The length of stay is over 365 days, and is not justified by a long-term-care diagnosis, a perinatal diagnosis, discharge to another facility, or the patient's death.	(LOS > 365) and NOT (PERINATE or LTC or (2 <= DISP <= 5) or (DIED = 1))	Set LOS to inconsistent (.C).
ED701	**DAY OF PRINCIPAL PROCEDURE WITHOUT PRINCIPAL PROCEDURE** There is a nonmissing day of principal procedure without a corresponding principal procedure.	(PRDATE1 or PRDAY1 ne .) and (PR1 = ' ')	Set PRDAY1 and PRDATE1 to inconsistent (.C).
ED702-ED7nn	**DAY OF SECONDARY PROCEDURE WITHOUT CORRESPONDING PROCEDURE** There is a nonmissing day of secondary procedure without a corresponding procedure code.	(PRDATEn or PRDAYn ne .) and (PRn = ' ')	Set PRDAYn and PRDATEn to missing (.) and move up all subsequent procedure date pairs.

Table 3. HCUP Edit Checks			
Edit Check	**Description**	**Condition**	**Action**
ED801	**DAY OF PRINCIPAL PROCEDURE NOT DURING STAY** The nonmissing day of the principal procedure is less than (-4) or greater than the length of stay plus one.	NOT (-4 <= PRDAY1 <= LOS+1)	Set PRDAY1 and PRDATE1 to inconsistent (.C).
ED802-ED8nn	**DAY OF SECONDARY PROCEDURE NOT DURING STAY** The nonmissing day of secondary procedure is less than (-4) or greater than the length of stay plus one.	NOT (-4 <= PRDAYn <= LOS+1)	Set PRDAYn and PRDATEn to inconsistent (.C).
ED910	**CHARGES PER DAY ARE EXCESSIVELY LOW, JUSTIFIED** Total charges and length of stay are both nonmissing; charges per day are less than $100, and are justified by discharge to another facility or by the patient's death.	(TOTCHG ÷ LOS < 100) and ((2 <= DISP <= 5) or (DIED = 1))	For tabulation purposes only.
ED911	**CHARGES PER DAY ARE EXCESSIVELY LOW, UNJUSTIFIED** Total charges and length of stay are both nonmissing; charges per day are less than $100, and are not justified by discharge to another facility or by the patient's death.	(TOTCHG ÷ LOS < 100) and NOT ((2 <= DISP <= 5) or (DIED = 1))	Set TOTCHG and LOS to inconsistent (.C).
ED920	**CHARGES PER DAY ARE EXCESSIVELY HIGH, JUSTIFIED** Total charges and length of stay are both nonmissing; charges per day are more than $20,000, and are justified by discharge to another facility or by the patient's death.	(TOTCHG ÷ LOS > 20000) and ((2 <= DISP <= 5) or (DIED = 1))	For tabulation purposes only.
ED921	**CHARGES PER DAY ARE EXCESSIVELY HIGH, UNJUSTIFIED** Total charges and length of stay are both nonmissing; charges per day are more than $20,000, and are not justified by discharge to another facility or by the patient's death.	(TOTCHG ÷ LOS > 20000) and NOT ((2 <= DISP <= 5) or (DIED = 1))	Set TOTCHG and LOS to inconsistent (.C).
ED951	**UNACCEPTABLE UNIFORM PAY SOURCE COMBINATION** The uniform primary pay source and secondary pay source are the same, and the sources are Medicare or Medicaid.	(PAY1 = PAY2) and (1 <= PAY2 <= 2)	Set PAY2 and PAY2_N to inconsistent (.C).
ED952	**UNACCEPTABLE NON-UNIFORM PAY SOURCE COMBINATION** The non-uniform primary pay source and secondary pay source are the same, and the sources are CHAMPUS, Worker's Compensation, or Title V.	(PAY1_N = PAY2_N) and (8 <= PAY2_N <= 10)	Set PAY2 and PAY2_N to inconsistent (.C).

DIAGNOSIS AND PROCEDURE SCREENS

The diagnosis and procedure screens used in HCUP inpatient discharge data processing are specified below. Codes added because of changes in ICD-9-CM coding are underlined.

Maternal: Screen used for 1988 to 1993 data:
Diagnoses 630 to 67694; V220 to V242; and V270 to V279
Procedures 720 to 7599

Screen used for 1994 to 1996 data:
Diagnoses 630 to 677; V220 to V242; and V270 to V279
Procedures 720 to 7599;

Screen used beginning in 1997:
Diagnoses 630 to 677; V220 to V242; and V270 to V279
Procedures 720 to 7599; 7965

Neonate: Screen used for 1988 to 1993 data:
Diagnoses 7600 to 7799; and V3000 to V392

Screen used for 1994-1995:
Diagnoses 75983, 7600 to 7799, V3000 to V392

Note: Code 75983 was erroneously included in the neonate screen. Because this is a rare condition, only a negligible number of records should be affected.

Screen used beginning in 1996:
Diagnoses 7600 to 7799, V3000 to V392

Perinate: Screen used beginning in 1988:
Diagnoses 7400 to 7799

Long-term-care indication:

Screen used for 1988 to 1992 data:
Diagnoses 2900 to 30503; 30520 to 3124; 3219 to 319; 3440; 430 to 438; and 797 to 7999

Screen used for 1993 data:
Diagnoses 2900 to 30503; 30520 to 3124; 3219 to 319; 3440; 34481; 430 to 438; 44024, 4416, 78003, and 797 to 7999

Note: Codes 78001, 78002, and 78009 were erroneously excluded from the long-term care screen. This would cause some discharges with long length of stays (over 365 days) to have ED601 "Long Length of Stay, Unjustified" set instead of ED600 "Long Length of Stay, Justified."

Screen used for 1994 data:

Diagnoses 2900 to 30503, 30520 to 3124, 3129 to 319, 34400 to 34409, 34481, 430 to 438, 44024, 4416, 78003, 797 to 7999

Note: Codes 78001, 78002, 78009, 31281, 31282, and 31289 were erroneously excluded from the long-term care screen. This would cause some discharges with long length of stays (over 365 days) to have ED601 "Long Length of Stay, Unjustified" set instead of ED600 "Long Length of Stay, Justified."

Screen used for 1995 data:

Diagnoses 2900 to 30503, 30520 to 3124, 3129 to 319, 34400 to 34409, 34481, 430 to 4352, 4358 to 438, 44024, 4416, 78003, 797 to 7999

Note: Codes 78001, 78002, 78009, 31281, 31282, 31289, and 4353 were erroneously excluded from the long-term care screen. This would cause some discharges with long length of stays (over 365 days) to have ED601 "Long Length of Stay, Unjustified" set instead of ED600 "Long Length of Stay, Justified."

Screen used for 1996 data:

Diagnoses 2900 to 319, 34400 to 34409, 34481, 430 to 438, 44024, 4416, 78001 to 78009, 797 to 7999

Screen used beginning in 1997:

Diagnoses 2900 to 319, 34400 to 34409, 34481, 430 to 4389, 44024, 4416, 78001 to 78009, 797 to 7999

Male diagnoses:

Screen used for 1988 to 1992 data:

Diagnoses 01640 to 01656, 05413, 0720, 09812 to 09814, 09832 to 09834, 13103, 1750 to 1759, 185 to 1879, 2144, 2220 to 2229, 2334 to 2336, 2364 to 2366, 2570 to 2579, 30274 to 30275, 4564, 600 to 6089, 7525 to 7526, 7587, 78832, 7922, 8780 to 8783, 9393, V1045 to V1049, V502

Screen used for 1993 to 1995 data:

Diagnoses 01640 to 01656, 05413, 0720, 09812 to 09814, 09832 to 09834, 13103, 1750 to 1759, 185 to 1879, 2144, 2220 to 2229, 2334 to 2336, 2364 to 2366, 2570 to 2579, 30274 to 30275, 4564, 600 to 6089, 7525 to 7526, 7587, 78832, 79093, 7922, 8780 to 8783, 9393, V1045 to V1049, V502

Screen used in 1996 data:

Diagnoses 01640 to 01656, 05413, 0720, 09812 to 09814, 09832 to 09834, 13103, 1750 to 1759, 185 to 1879, 2144, 2220 to 2229, 2334 to 2336, 2364 to 2366, 2570 to 2579, 30274 to 30275, 4564, 600 to 6089, 75251 to 75269, 7587, 78832, 79093, 7922, 8780 to 8783, 9393, V1045 to V1049, V502

Screen used beginning in 1997:

Diagnoses 01640 to 01656, 05413, 0720, 09812 to 09814, 09832 to 09834, 13103, 1750 to 1759, 185 to 1879, 2144, 2220 to 2229, 2334 to 2336, 2364 to 2366, 2570 to 2579, 30274 to 30275, 4564, 600 to 6089, 75251 to 75269, 7587, 78832, 79093, 7922, 8780 to 8783, 9393, V1045 to V1049, V1642-V1643, V502

Male procedures:

Screen used beginning in 1988:

Procedures 600 to 6499, 8791 to 8799, 9824, 9994 to 9996.

Female diagnoses:

Screen used from 1988 to 1995:

Diagnoses 01660 to 01676, 05411 to 05412, 09815 to 09817, 09835 to 09837, 1121, 13101, 1740 to 1749, 179 to1849, 1986, 2180 to 2219, 2331 to 2333, 2360 to 2363, 2560 to 2569, 30273, 30276, 30651 to 30652, 4566, 6115 to 6116, 6140 to 66942, 66944 to 67694, 71630 to 71639, 7520 to 75249, 7923, 7950, 8674 to 8675, 8784 to 8787, 90255 to 90256, 90281 to 90282, 9391 to 9392, 9474, 99632, V074, V1040 to V1044, V131, V220 to V235, V238 to V2501, V251, V253, V2541 to V2543, V255, V261, V270 to V289, V447, V524, V557, V723 to V724, V762

Note: Starting in 1994, Codes 66943, 677, V237, V4551, V4552, and V5042 were erroneously excluded from the female screen. This would cause ED1nn "Diagnosis Inconsistent with Sex" to not be set when a male discharge had one of these female diagnoses.

Screen used in 1996:

Diagnoses 01660 to 01676, 05411 to 05412, 09815 to 09817, 09835 to 09837, 1121, 13101, 1740 to 1749, 179 to1849, 1986, 2180 to 2219, 2331 to 2333, 2360 to 2363, 2560 to 2569, 30273, 30276, 30651 to 30652, 4566, 6115 to 6116, 6140 to 677, 71630 to 71639, 7520 to 75249, 7923, 7950, 8674 to 8675, 8784 to 8787, 90255 to 90256, 90281 to 90282, 9391 to 9392, 9474, 99632, V074, V1040 to V1044, V131, V220 to V2501, V251, V253, V2541 to V2543, V255, V261, V270 to V289, V447, V4551-V4552, V5042, V524, V557, V723 to V724, V762

Note: Code E9672 was erroneously included in the female screen when processing 1996 data for all states and 1997 for a few states. This would cause male discharges with the diagnosis E9672 “Child and adult battering and other maltreatment -- by mother or step mother” to have edit check ED1nn set to 1 and the diagnosis validity flag DXVn and SEX set to inconsistent (.C). Because this is a rarely used code, only a negligible number of records should be affected.

Screen used beginning in 1997:

Diagnoses 01660 to 01676, 05411 to 05412, 09815 to 09817, 09835 to 09837, 1121, 13101, 1740 to 1749, 179 to1849, 1986, 2180 to 2219, 2331 to 2333, 2360 to 2363, 2560 to 2569, 30273, 30276, 30651 to 30652, 4566,

6115 to 6116, 6140 to 677, 71630 to 71639, 7520 to 75249, 7923, 7950, 7965, 8674 to 8675, 8784 to 8787, 90255 to 90256, 90281 to 90282, 9391 to 9392, 9474, 99632, V074, V1040 to V1044, V131, V1641, V220 to V2501, V251, V253, V2541 to V2543, V255, V261, V270 to V289, V447, V4551-V4552, V5042, V524, V557, V723 to V724, V762

Note: Code E9672 was erroneously included in the female screen when processing 1996 data for all states and 1997 for a few states. This would cause male discharges with the diagnosis E9672 “Child and adult battering and other maltreatment -- by mother or step mother” to have edit check ED1nn set to 1 and the diagnosis validity flag DXVn and SEX set to inconsistent (.C). Because this is a rarely used code, only a negligible number of records should be affected.

Female procedures:

Screen used for 1988 to 1995 data:

Procedures 650 to 7599, 8781 to 8789, 8846, 8878, 8926, 9141 to 9149, 9217, 9614 to 9618, 9644, 9724 to 9726, 9771 to 9775, 9816 to 9817, 9823, 9998

Screen used beginning in 1996:

Procedures 6501 to 7599, 8781 to 8789, 8846, 8878, 8926, 9141 to 9149, 9217, 9614 to 9618, 9644, 9724, 9726, 9771 to 9775, 9816 to 9817, 9823, 9998